3-month summary

- Greatest chance of impacts from cold weather are in early winter
- There is a reduced chance of wet conditions and impacts from heavy rainfall
- Chances of dry conditions are greater than normal
- Stormy conditions, and impacts from high winds, are less likely than normal

3-month likelihood of impact

Temperature

15% chance the season will be COLD	65% chance the season will be NEAR AVERAGE	20% chance the season will be MILD
0.8× the normal chance	1.1× the normal chance	1.0× the normal chance

Precipitation

25% chance the season will be DRY	65% chance the season will be NEAR AVERAGE	10% chance the season will be WET
1.3× the normal chance	1.1× the normal chance	0.5× the normal chance

Wind speed

30% chance the season will be CALM	65% chance the season will be NEAR AVERAGE	5% chance the season will be WINDY
1.5× the normal chance	1.1× the normal chance	0.3× the normal chance

1-month summary

- The risk of impacts from cold weather is greater than in the most recent years
- However, a near normal December remains the most likely outcome
- Reduction in the chance of a wet December and impacts from heavy rainfall

1-month likelihood of impact

Temperature

25% chance the month will be COLD	60% chance the month will be NEAR AVERAGE	15% chance the month will be MILD
1.3× the normal chance	1.0× the normal chance	0.8× the normal chance

Precipitation

35% chance the month will be DRY	50% chance the month will be NEAR AVERAGE	15% chance the month will be WET
1.8× the normal chance	0.8× the normal chance	0.8× the normal chance

Wind speed

30% chance the month will be CALM	55% chance the month will be NEAR AVERAGE	15% chance the month will be WINDY
1.5× the normal chance	0.9× the normal chance	0.8× the normal chance

Understanding the Outlook

The Outlook uses 3 categories for possible UK temperature, precipitation and wind speed in the next 1 and 3 months:

COLD, NEAR AVERAGE and MILD for temperature
WET, NEAR AVERAGE and DRY for precipitation
CALM, NEAR AVERAGE and WINDY for wind speed

These are linked to observed UK conditions in past years. The NEAR AVERAGE category represents typical conditions for the period and has a normal likelihood of 60%. The higher and lower categories represent more unusual conditions that are more likely to produce impacts. Each has a normal likelihood of 20%.

The Outlook shows how the chances of occurrence of the categories differ from normal, based on knowledge of expected global meteorological patterns. It does not identify which category will actually occur.

Same 3-month period over the last 10 years

2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
NEAR AVERAGE	MILD	NEAR AVERAGE	MILD	MILD	NEAR AVERAGE	MILD	MILD	NEAR AVERAGE	MILD
NEAR AVERAGE	WET	NEAR AVERAGE	WET	DRY	NEAR AVERAGE	DRY	WET	WET	NEAR AVERAGE
NEAR AVERAGE	WINDY	NEAR AVERAGE	WINDY	NEAR AVERAGE	NEAR AVERAGE	CALM	WINDY	NEAR AVERAGE	NEAR AVERAGE

Same 1-month period over the last 10 years

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
NEAR AVERAGE	MILD	NEAR AVERAGE	MILD	MILD	NEAR AVERAGE	MILD	NEAR AVERAGE	NEAR AVERAGE	NEAR AVERAGE
WET	WET	NEAR AVERAGE	WET	DRY	NEAR AVERAGE	NEAR AVERAGE	NEAR AVERAGE	WET	NEAR AVERAGE
NEAR AVERAGE	WINDY	NEAR AVERAGE	WINDY	NEAR AVERAGE	NEAR AVERAGE	NEAR AVERAGE	NEAR AVERAGE	NEAR AVERAGE	NEAR AVERAGE

Outlook in context

Drivers of UK weather for December to February

The impact of global weather patterns acts to shift the chances of the categories in the Outlook. Their influence on the UK increases through late autumn and into winter. Drivers relevant to the current Outlook are:
• La Niña, which increases the chance of north or northwesterly winds early in winter and westerly winds later in the winter.
• A westerly phase of the QBO, increasing the chance of westerly winds from the Atlantic
• The Madden Julian Oscillation crossing the Pacific Ocean increases the chance of northerly or easterly winds in early December and therefore an early winter cold snap

Long-range weather predictions

The Met Office and other prediction centres around the world routinely produce long-range predictions of conditions in the months ahead. There is relatively good agreement for an increased likelihood of higher-than-average pressure near or to the north and west of the UK during early winter, with northerly or easterly winds prevailing more than usual, bringing an increased chance of cold snaps. For the rest of the season, there is good general agreement with respect to increased chances of high pressure centred close to the UK, which would see greater likelihood of a reduction in the frequency of rain-bearing systems and a reduction in storminess, as compared to normal.

Impact

For the whole country, the likelihood of impacts from strong winds is decreased as compared to typical risks for the season. However, this doesn't preclude the chance of stormy spells at times. With dry conditions more likely than wet, there is a reduction in the risk of impacts from heavy rainfall. Impacts from cold weather related hazards, such as snow and ice, are more likely during the early part of winter.

Outlook compared to normal likelihood

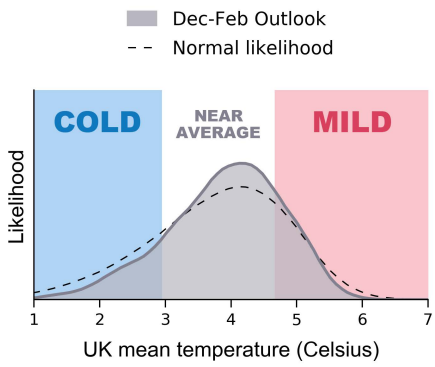
The curves below show the likelihood of the 1- and 3-month average temperature, precipitation and wind speed taking specific values. In each case:

- The dashed curve shows the normal likelihood based on how often each value has been recorded in past years
- The solid curve shows the current likelihood based on the Outlook for this year

The differences in these curves show how the probabilities for the coming periods differ compared to past years. Where the solid curve (corresponding to this year's Outlook) lies above the dashed curve (normal likelihood), the temperature, precipitation or wind speed at that point has a greater-than-normal likelihood of occurring. Likewise, wherever it is below the dashed curve, the likelihood of those values is less than normal.

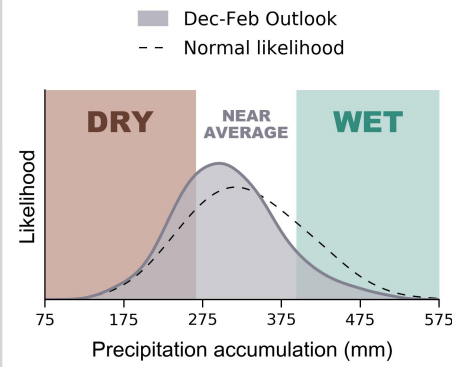
A shift of the solid curve to the left of the dashed curve indicates an increase in the chances of below-average temperature, rainfall or winds. A shift to the right, meanwhile, indicates increased chances of above-average values.

3-month temperature Outlook compared to normal



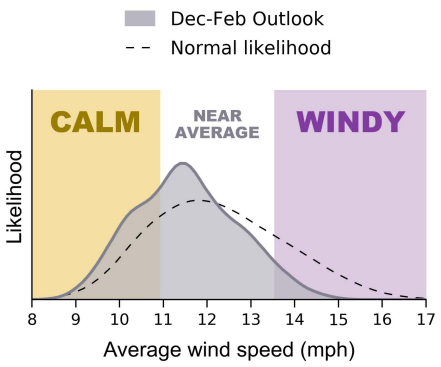
Likelihoods of cold and mild are similar

3-month precipitation Outlook compared to normal



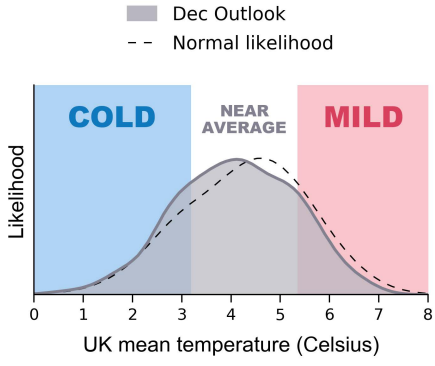
Likelihood leans towards dry conditions

3-month wind speed Outlook compared to normal



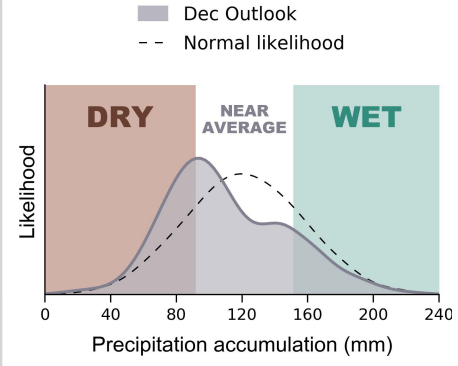
Likelihood leans towards calm conditions

1-month temperature Outlook compared to normal



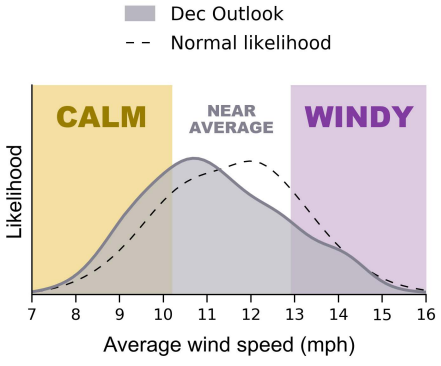
Likelihood leans slightly towards cold conditions

1-month precipitation Outlook compared to normal



Likelihood leans towards dry conditions

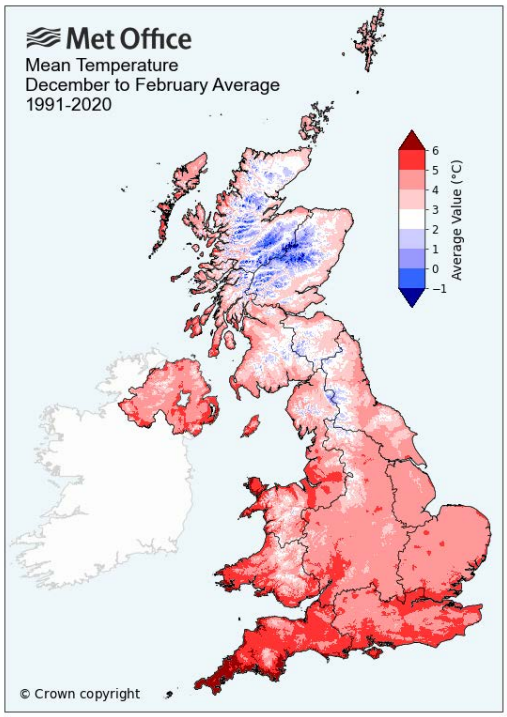
1-month wind speed Outlook compared to normal



Likelihood leans towards calm conditions

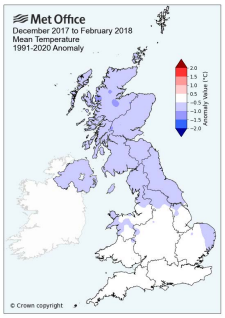
Long-term average temperatures (3-month)

This page shows the long-term average temperatures across the UK applicable to the 3 month Outlook period.

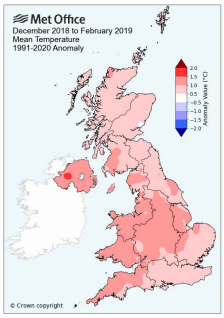


Average temperatures for December - February based on observations of past years.

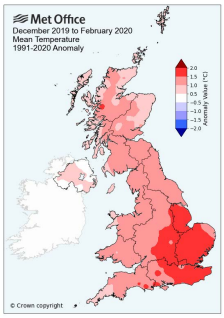
Last 5 years temperatures, difference from average (3-month)



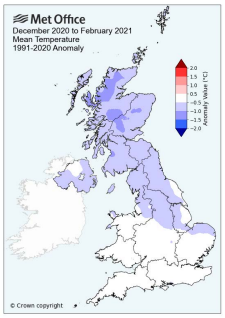
Dec - Feb 2017/18



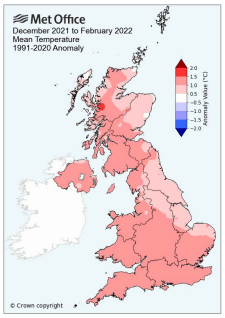
Dec - Feb 2018/19



Dec - Feb 2019/20



Dec - Feb 2020/21



Dec - Feb 2021/22

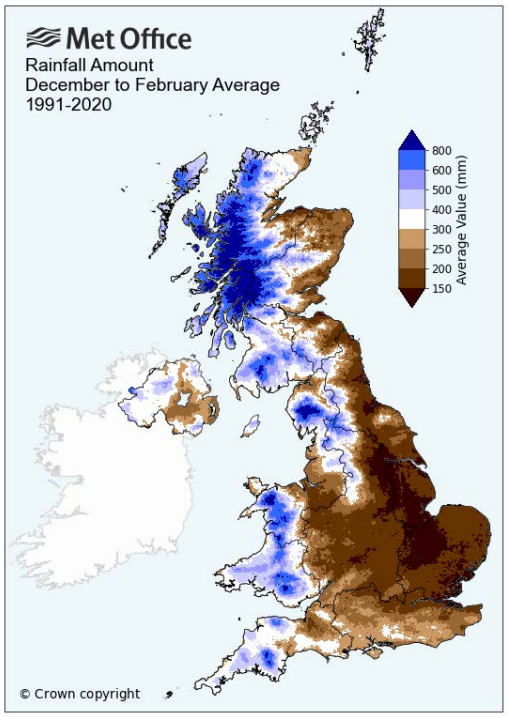
Anomaly (°C)

< -2.0	-2.0 to -1.5	-1.5 to -1.0	-1.0 to-0.5	-0.5 to 0.5	0.5 to 1.0	1.0 to 1.5	1.5 to 2.0	> -2.0

These maps show how December - February temperatures in the last five years differed from the long-term average temperatures shown above in the upper panel. Pink and red colours indicate warmer-than-average conditions while blue shades indicate cooler-than-average conditions. Detailed information on the climate of the UK is available at www.metoffice.gov.uk/climate.

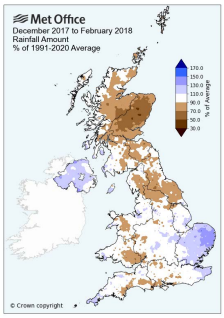
Long-term average precipitation (3-month)

This page shows the long-term average precipitation across the UK applicable to the 3 month Outlook period.

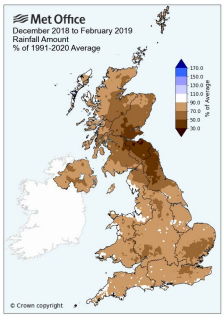


Average precipitation for December - February based on observations of past years.

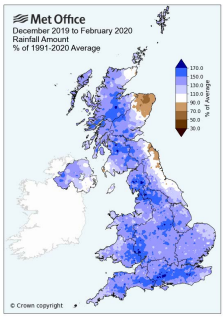
Last 5 years precipitation, difference from average (3-month)



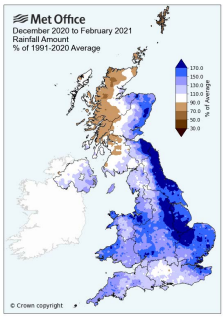
Dec - Feb 2017/18



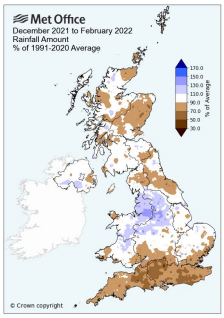
Dec - Feb 2018/19



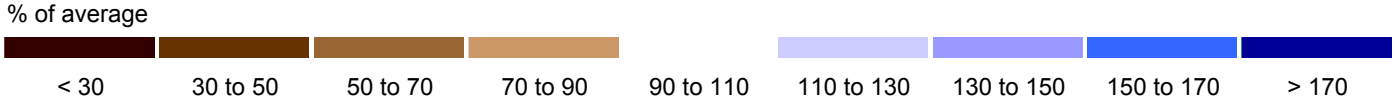
Dec - Feb 2019/20



Dec - Feb 2020/21



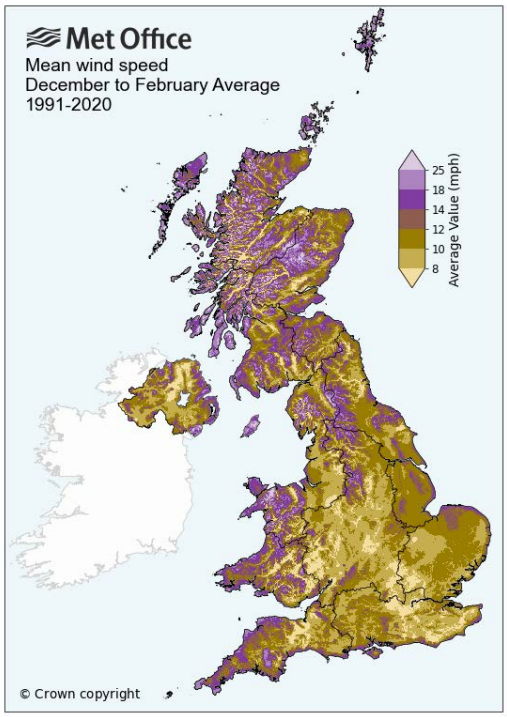
Dec - Feb 2021/22



These maps show how December - February precipitation in the last five years differed from the long-term average precipitation shown above in the upper panel. Brown colours indicate drier-than-average conditions while blue shades indicate wetter-than-average conditions. Detailed information on the climate of the UK is available at www.metoffice.gov.uk/climate.

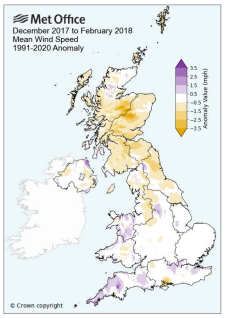
Long-term average wind speed (3-month)

This page shows the long-term average wind speed across the UK applicable to the 3 month Outlook period.

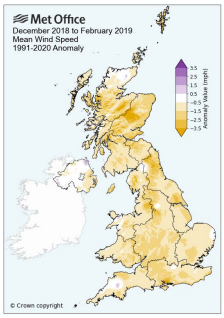


Average wind speed for December - February based on observations of past years.

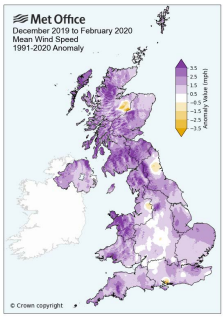
Last 5 years wind speed, difference from average (3-month)



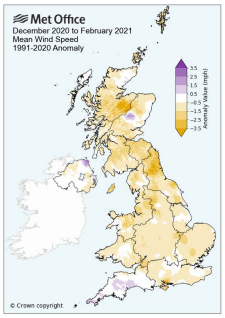
Dec - Feb 2017/18



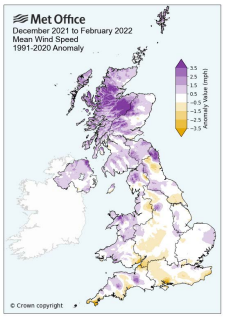
Dec - Feb 2018/19



Dec - Feb 2019/20



Dec - Feb 2020/21



Dec - Feb 2021/22

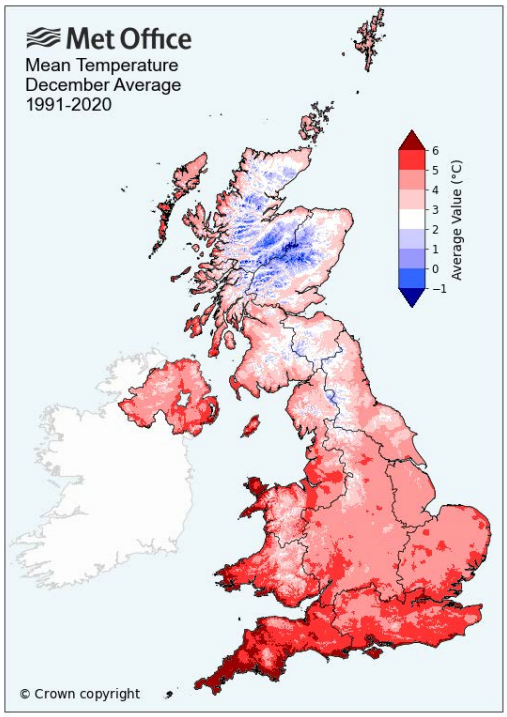
Anomaly (mph)

< -3.5	-3.5 to -2.5	-2.5 to -1.5	-1.5 to -0.5	-0.5 to 0.5	0.5 to 1.5	1.5 to 2.5	2.5 to 3.5	> 3.5

These maps show how December - February wind speed in the last five years differed from the long-term average wind speeds shown above in the upper panel. Yellow colours indicate calmer-than-average conditions while purple shades indicate windier-than-average conditions. Detailed information on the climate of the UK is available at www.metoffice.gov.uk/climate.

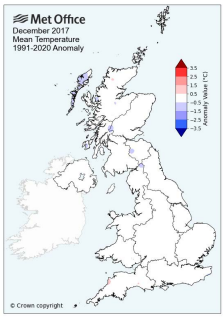
Long-term average temperatures (1-month)

This page shows the long-term average temperatures across the UK applicable to the 1 month Outlook period.

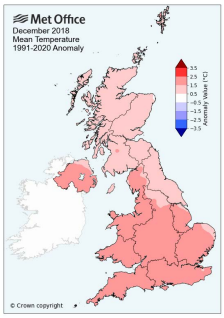


Average temperatures for December based on observations of past years.

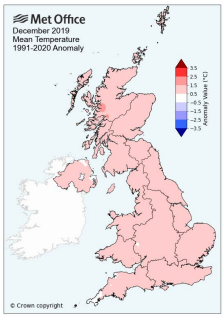
Last 5 years temperatures, difference from average (1-month)



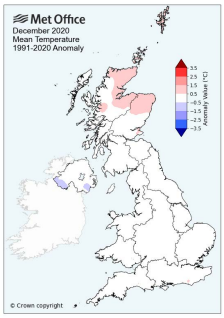
Dec 2017



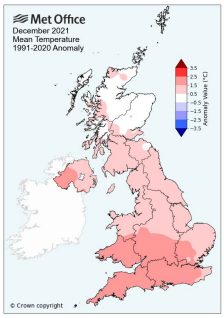
Dec 2018



Dec 2019



Dec 2020



Dec 2021

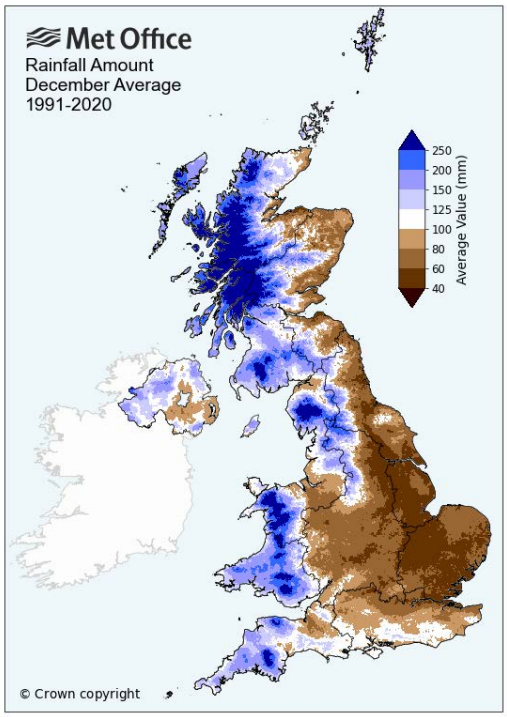
Anomaly (°C)

< -2.0	-2.0 to -1.5	-1.5 to -1.0	-1.0 to-0.5	-0.5 to 0.5	0.5 to 1.0	1.0 to 1.5	1.5 to 2.0	> -2.0

These maps show how December temperatures in the last five years differed from the long-term average temperatures shown above in the upper panel. Pink and red colours indicate warmer-than-average conditions while blue shades indicate cooler-than-average conditions. Detailed information on the climate of the UK is available at www.metoffice.gov.uk/climate.

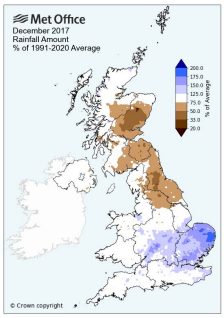
Long-term average precipitation (1-month)

This page shows the long-term average precipitation across the UK applicable to the 1 month Outlook period.

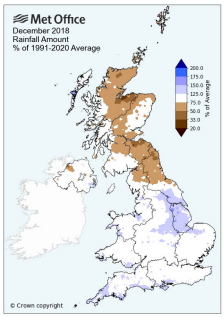


Average precipitation for December based on observations of past years.

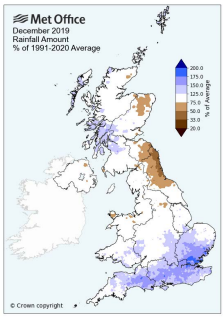
Last 5 years precipitation, difference from average (1-month)



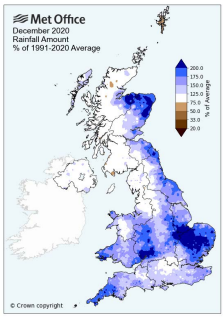
Dec 2017



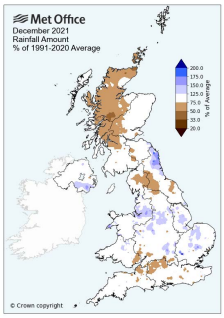
Dec 2018



Dec 2019



Dec 2020



Dec 2021

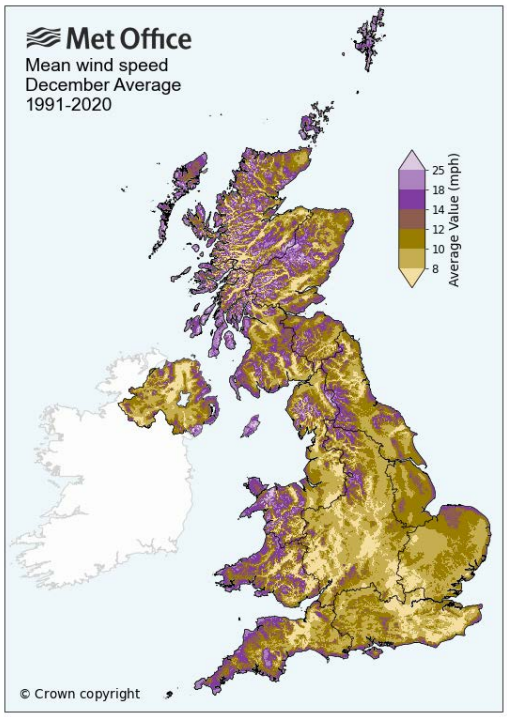
% of average

< 30	30 to 50	50 to 70	70 to 90	90 to 110	110 to 130	130 to 150	150 to 170	> 170

These maps show how December precipitation in the last five years differed from the long-term average precipitation shown above in the upper panel. Brown colours indicate drier-than-average conditions while blue shades indicate wetter-than-average conditions. Detailed information on the climate of the UK is available at www.metoffice.gov.uk/climate.

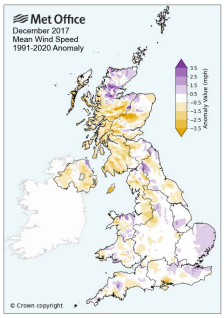
Long-term average wind speed (1-month)

This page shows the long-term average wind speed across the UK applicable to the 1 month Outlook period.

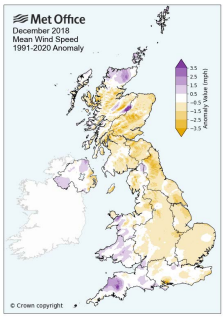


Average wind speed for December based on observations of past years.

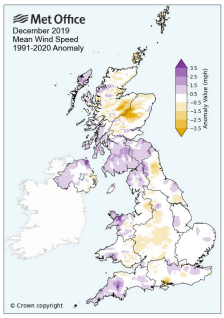
Last 5 years wind speed, difference from average (1-month)



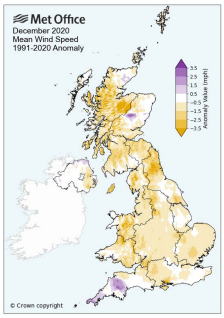
Dec 2017



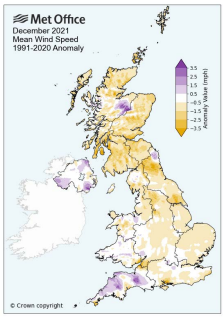
Dec 2018



Dec 2019



Dec 2020



Dec 2021

Anomaly (mph)

< -3.5	-3.5 to -2.5	-2.5 to -1.5	-1.5 to -0.5	-0.5 to 0.5	0.5 to 1.5	1.5 to 2.5	2.5 to 3.5	> 3.5

These maps show how December wind speed in the last five years differed from the long-term average wind speeds shown above in the upper panel. Yellow colours indicate calmer-than-average conditions while purple shades indicate windier-than-average conditions. Detailed information on the climate of the UK is available at www.metoffice.gov.uk/climate.

Q&As

Q. What is the point of the Outlook, who is it meant for?
A. This Outlook is produced for planners in government and business who make risk-based decisions. These users are aware of the complexities of this type of outlook and will include those factors in their decision-making process.

Q. How did you decide on the Outlook? What are the main factors affecting it?
A. It is based on information from observations, several numerical prediction systems and expert judgement. See the 'Outlook in Context' section of the Outlook for more details.

Q. Is the Outlook for the whole country?
A. The Outlook is for the average of conditions over the UK as a whole. Regional deviations from the UK-average can occur. For example, average UK precipitation can result from below-average rainfall for the northwest and above-average for the southeast.

Q. How confident are you in this Outlook?
A. The percentages in the 'Likelihood of Impact' sections of the Outlook give the level of confidence.

Q. Does the increased likelihood of a dry season mean drought conditions will continue to be a problem?
A. Rainfall this autumn has been above average for most of the UK, however, drought is a complex issue, and it will take more than a few months rain to undo the impact of the prior prolonged dry spell, particularly across England and parts of Wales. The Environment Agency and Natural Resources Wales will continue to work closely with water companies to assess what actions over the winter may be needed in those areas currently affected by drought.

Q. Are we likely to see cold spells and winter hazards such as snow and ice this winter?
A. This Outlook concerns the weather themes for the whole 3-month period for the whole country, it does not tell us if, or when, cold spells might come along. However, broadly speaking, we are more likely to see colder spells earlier in the winter season. These could include snow and ice at times. In recent years, the likelihood of our coldest category has often been quite small reflecting the fact that UK climate has warmed compared to the long-term average.

Q. Will it be a white Christmas?
A. Whilst this Outlook looks ahead to December, it cannot identify weather for a particular day or week, so is not useful when planning for a particular day such as Christmas Day. Our 30-day forecast will provide a general view of weather the trends we are likely to see as we get nearer to Christmas, and you will find a more detailed forecast, together with any warnings, in our 7-day forecasts.

Q. Does the suggestion of a reduction in the likelihood of impacts from strong winds mean we will have fewer named storms this winter?
A. While the Outlook suggests a reduction in the frequency of wet and windy weather compared to normal, stormy spells remain a possibility. However, the naming of storms is based on expected impacts, which are dependent on aspects such as the timing of events. The overall Outlook for a month or season therefore cannot be used to predict the number of named storms in a given period.

About the Outlook

The Outlook presented here is for United Kingdom as a whole and is based on information from observations, several numerical prediction systems and expert judgement. It is updated monthly to reflect the latest information on global weather patterns and their effect on the UK. The Outlook is designed to be used in conjunction with shorter-range forecasts – detailed weather forecast information is available on the Met Office website.

In this product, temperature refers to the average of daytime maxima and night-time minima. Wind speed refers to the average wind speed at a height of 10 metres. All numerical values relate to averages (temperature, wind speed) or totals (precipitation – rain, sleet, snow and hail) over 1 or 3 months, which are further averaged over the UK land area as a whole. Normal likelihood and long-term averages are established using the period 1991-2020.

Find out more

- UK 3-month Outlook user guidance page:
  https://www.metoffice.gov.uk/services/government/contingency-planners/user-guidance/user-guidance
- Explainers on climate drivers (such as the El Niño Southern Oscillation and North Atlantic Oscillation) that influence seasonal forecasts and the impacts they can have on UK weather:
  https://www.metoffice.gov.uk/services/government/contingency-planners/seasonal-forecasts-and-climate-drivers-resources
- Contingency planners page:
  https://www.metoffice.gov.uk/services/government/contingency-planners/index

Contact us

Website:
www.metoffice.gov.uk

Email:
enquiries@metoffice.gov.uk

Provide your feedback

We would like to hear your feedback on the UK 3-month Outlook to understand how it is being used. Please fill in the short form using this link or QR code to share your thoughts.